

Antivirus &  
antibacterial  
laminates



**Greenlam**  
LAMINATES

# Technical Datasheet

Greenlam Laminate 1.20 - 1.50 mm



# TECHNICAL DATASHEET

## GREENLAM LAMINATE, HGS THICKNESS: 1.20 and 1.50mm

| Sr. No.                                    | PROPERTIES                                     | Unit                            | TEST METHOD AS PER EN 438 Part 2 & 3: 2016 | SPECIFIED VALUES                         | GREENLAM TYPICAL VAULES                 |                         |        |
|--|--|---------------------------------|--|--|---|-------------------------|--------|
| <b>GENERAL</b>                             |  |                                 |  |  |   |                         |        |
| 1  | Classification                                 |                                 | EN 438-3 Table- 3                          | HGS                                      | HGS (Standard) and HGF (Fire Retardant) |                         |        |
| 2  | Nominal Thickness                              |                                 |  |  | 1.20mm and 1.50mm                       |                         |        |
| <b>DIMENSIONAL PROPERTIES</b>              |  |                                 |  |  |   |                         |        |
| 3  | Thickness maximum variation                    | mm                              | EN 438-2- 5                                | ± 0.15                                   | Complies                                | Complies                |        |
| 4  | Surface Quality                                | mm <sup>2</sup> /M <sup>2</sup> | EN 438-3-6.3, 5.2.4                        | 1.0 (max)                                | Complies                                | Complies                |        |
| 5  | Fibers, Hairs & Scratches                      | mm/M <sup>2</sup>               |  | 10.0 (max)                               | Complies                                | Complies                |        |
| 6  | Length & Width                                 | mm                              | EN 438-2- 6                                | +10mm /-0mm                              | +5mm /-0mm                              | +5mm /-0mm              |        |
| 7  | Flatness                                       | mm/M                            | EN 438-2 - 9                               | 60.0 (max)                               | ≤ 50                                    | ≤ 50                    |        |
| 8  | Edge Damage                                    | mm                              | EN 438-2 – CL. 6.2.5.3                     | 20.0 (max)                               | Complies                                | Complies                |        |
| 9  | Edges Straightness                             | mm/M                            | EN 438-2 - 7                               | 1.5 (max)                                | ≤ 1                                     | ≤ 1                     |        |
| 10   | Edges Squareness                               | mm/M                            | EN 438-2 - 8                               | 1.5 (max)                                | Complies                                | Complies                |        |
| <b>SURFACE PROPERTIES</b>                  |  |                                 |  |  |   |                         |        |
| 11   | Resistance to Dry Heat at 160° C               | Rating (min.)                   | EN 438-2 -16                               | 4  | Complies                                | Complies                |        |
| 12   | Resistance to Surface Wear                     | Revolutions                     | EN 438-2 - 10                              | 150 (min.) IP                            | Complies                                | Complies                |        |
| 13   | Resistance to Stains                           | Group 1 & 2                     | Rating (min.)                              | EN 438-2 - 26                            | 5                                       | 5                       |        |
|  |  | Group 3                         | Appearance                                 |  | 4                                       | ≥ 4                     | ≥ 4    |
| 14   | Resistance to Wet Heat at 100 ° C              | Rating (min.)                   | EN 438-2 - 18                              | 4  | Complies                                | Complies                |        |
| 15   | Resistance to Scratching                       | Rating                          | EN 438-2 - 25                              | 3  | Complies                                | Complies                |        |
| 16   | Resistance to Water Vapor, Appearance          | Rating                          | EN 438-2 -14                               | 4  | Complies                                | Complies                |        |
| 17   | Light Fastness (Xenon-Arc Light)               | Contrast                        | EN 438-2 - 27                              | 4 to 5                                   | 4                                       | 4                       |        |
| 18   | Resistance to cigarette burn                   | Rating                          | EN 438-2: 2005 Part- 30                    | 4  | Complies                                | Complies                |        |
| <b>PHYSICAL PROPERTIES</b>                 |  |                                 |  |  |   |                         |        |
| 19   | Resistance to Impact by Large Diameter Ball    | Drop Height                     | mm   | EN 438-2 - 21                            | 800 (min.)                              | 1300                    |        |
|  |  | Diameter of Indentation         | mm   |  | 10 (max)                                | 7                       | 7      |
| 20   | Resistance to Impact by Small Diameter Ball    | N                               | EN 438-2 - 20                              | 20 (min)                                 | Complies                                | Complies                |        |
| 21   | Resistance to Immersion in Boiling Water       | Rating                          | EN 438-2 - 12                              | 4  | Complies                                | Complies                |        |
| 22   | Dimensional stability at Elevated temperatures | Longitudinal                    | %  |  | 0.55 (max.)                             | ≤ 0.30                  | ≤ 0.30 |
|  |  | Transverse                      | %  |  | 1.05 (max.)                             | ≤ 0.55                  | ≤ 0.55 |
| 23   | Resistance to cracking                         | Rating                          | EN 438-2 - 23                              | 4 (min)                                  | 5                                       | 5                       |        |
| 24   | Density  | g/cm3                           | EN ISO 1183 -1 :2019                       | 1.35 (min.)                              | Complies                                | Complies                |        |
| 25   | Reaction to Fire                               | Class                           | EN 13501-1                                 | *See the foot note for fire performance. |   |                         |        |
| 26   | Thermal Conductivity                           | W/m °K                          | EN 12524                                   | --                                       | 0.24                                    | 0.24                    |        |
| <b>HEALTH AND ENVIRONMENTAL PROPERTIES</b> |  |                                 |  |  |   |                         |        |
| 27   | Formaldehyde Release                           | Ppm                             | EN 16516:2017                              | 0.1                                      | 0.2                                     | 0.2                     |        |
|  |  | Certificate                     | UL-2818:2013                               | Greenguard Gold                          | Complies                                | Complies                |        |
| 28   | Food safe                                      | mg/dm <sup>2</sup>              | EN 1186-1:2002<br>EN 1186-3:2022           | Migration of 10                          | Pass                                    | Pass                    |        |
| 29   | Anti-bacterial Efficacy                        | Reduction                       | JIS Z 2801: 2012                           | 2.0 (min)<br>99.5% (min)                 | Complies                                | Complies                |        |
| 30   | Anti-Viral Efficacy                            | Reduction                       | ISO 21702:2019                             | 95.0% (min)                              | 99.9                                    | 99.9                    |        |
| 31   | Anti-fungal Efficacy                           | Growth after 28 days            | ASTM G-21-2015                             | Rating 1                                 | Rating 0<br>(No Growth)                 | Rating 0<br>(No Growth) |        |

**HGS** = Horizontal General Purpose Standard  
**HGP** = Horizontal General Purpose Post Forming Grade  
**HGF (FR)** = Horizontal General Purpose FIRE RETARDANT  
**\*\*Fire test performance** will depend on laminate thickness and construction, substrate type and thickness, and adhesive used. It is advised to contact the laminate manufacturer for details of test reports and certifications held. Greenlam can supply type S and F HPLs.  
**Class (Rating)** - 1= Surface damage, 2= Severe appearance alteration, 3= Moderate change, 4= Slight change visible at certain angle, 5= No change

**Virus tested:** MS2 Bacteriophage  
**Bacteria tested** - 1. Staphylococcus aureus. 2. Escherichia coli, 3. Klebsiella pneumoniae  
 4. Meticillin Resistant Staphylococcus aureus (MRSA) S- 129 5. Pseudomonas aeruginosa  
 6. Salmonella typhimurium 7. Streptococcus faecalis 8. Enterococcus faecalis 9. Candida albicans  
**Fungus tested:** 1. Aspergillus niger 2. Penicillium funiculosum 3. Gliocladium virens 4. Chaetobium globosum 5. Aurobasidium pullulans  
 As per the test report 99.99% of bacteria and virus gets retarded within 24 hours of contact.

### LIMITED WARRANTY

Greenlam Industries Limited (GREENLAM®) warrants to the original Buyer that GREENLAM® HPL will be free of defects, under normal, proper and intended usage within acceptable manufacturing specifications for a period of one (1) year from date of sale to the original Buyer.  
 Buyer's remedy in case of claims, as a result of defective HPL, shall be limited to only the replacement of HPL by GREENLAM®.

### TRADEMARKS

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### CHANGE OF SPECIFICATION

The company reserves the right to change specifications at any time without prior notice. It is recommended that you request actual samples prior to specification.



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